

**REMARKS**

This amendment is submitted in response to the final Office Action dated March 10, 2006. Claims 19-27 have been amended herein and claims 1-27 remain pending. No new matter has been added, and the amendments place the claims in better condition for allowance by further clarifying that the claimed subject matter is an article of manufacture and not merely program instructions.

**CLAIMS REJECTIONS UNDER 35 U.S.C. § 101**

Claims 1, 10, and 19 have been rejected under 35 U.S.C. § 101 as being merely directed to an abstract idea not tied to a technological art, environment, or machine which would result in practical application producing a useful, concrete, and tangible result. Applicants respectfully disagree. Specifically, Applicants disagree with the assertion that the term "job" as utilized in the claims could be interpreted as merely an abstract idea. The plain meaning of "job" in the context of a claim that recites "job execution means" is some form of discrete task (as opposed to the usage of "job" as designating a person's profession. The specification includes numerous characterizations and examples of "jobs" supporting the "plain meaning" claim interpretation, rendering the reasonable interpretation of "job" to be any discrete task executed by "job execution means" (see page 6, line 11- page 7, line 16, describing job execution means for executing jobs; describing a main computer unit, a server, a personal computer, anti-virus programs, a tape drive and function diagnosis program for predicting occurrences of tape drive failure as examples of job execution means; see Figure 1, depicting jobs 14 and 15 being executed by job execution means 13.) Applicants urge that interpreting "job" as just an abstract idea is facially unreasonable in view of the numerous concrete characterization of the term in the claim itself (i.e. recited job execution means) and in Applicants' specification.

Applicants further note that claim 1 recites "probability distribution forming means for determining a probability distribution in accordance with times at which execution of said first job occurs." Means for determining a probability distribution in accordance with a specified criterion is clearly not a mere abstraction but instead qualifies as a concrete entity producing a tangible result.

Applicants disagree with the assertion on page 3 of the Office Action that independent claims 1, 10, and 19, and associated dependent claims 2-9, 11-18, and 20-27 include only software features without means, such as data processing means, for performing functions. Claim 1 expressly recites elements including “job execution means for executing a plurality of jobs ...”, “probability distribution forming means for determining a probability distribution ...”, and “execution timing means for scheduling execution of said second job ...” The method steps recited in independent claim 10 similarly are not expressions of mere abstract phenomena such as thinking, but instead express concrete steps of “executing a plurality of jobs ...”, “determining a probability distribution ...” and “scheduling execution of said second job ...”

Applicants further disagree with the assertion on page 7 that the claims are not supported by either a specific and substantial utility or a well-established utility. In fact, claims 1, 10, and 19 expressly recites a system/method/computer readable medium “for controlling executing timing of jobs” which is clearly a well-established utility. Moreover, each of claims 1, 10, and 19 include steps in which jobs are executed at specifically characterized time intervals, a probability distribution is determined in accordance with the occurrences of specified jobs, and a second category of jobs is executed in accordance with the determined probability distribution.

In FIG. 1, Applicants have provided a high-level block diagram illustrating a job execution apparatus containing all of the major features recited in the claims. The specification is replete with concrete and exemplary characterizations of the various entities such as jobs and job execution means.

**CLAIMS REJECTIONS UNDER 35 U.S.C. § 112**

Claims 1-27 have been rejected under 35 U.S.C. § 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. For the foregoing reasons traversing the rejections under 35 U.S.C. § 101, Applicants urge that while specific computer hardware may, in accordance with the numerous examples provided in the specification, be used to implement the claimed invention, 35 U.S.C. § 112, second paragraph does not require a recitation of specific computer hardware components.

For the foregoing reasons, Applicants urge reconsideration and withdrawal of the rejections under 35 U.S.C. § 112, second paragraph.

**CLAIM REJECTIONS UNDER 35 U.S.C. § 103**

Claims 1-2, 10-11, and 19-20 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Pat. No. 5,819,232, issued to Shipman (hereinafter *Shipman*). Applicants traverse the foregoing rejections for the following reasons and those set forth in Amendment B filed on December 14, 2005.

Applicants' claimed invention is directed to controlling execution sequencing (i.e. scheduling) of multiple jobs some of which occur irregularly, such as read/write memory accesses, and some of which occur at regular time intervals, such as system diagnostic applications. The invention includes means and steps for scheduling the regularly occurring processes in accordance with predicted patterns of occurrence of the irregularly occurring processes in a manner that minimizes scheduling conflicts and maximizes scheduling throughput. For example, independent method claim 10 comprises, in part, a step of determining a probability distribution in accordance with times at which a first, irregularly occurring job is executed. The method further includes a step of scheduling execution of the second, regularly occurring job in accordance with the determined probability distribution. In this manner, the probability distribution determined from the irregular occurrences of the first, irregular-type job is used as the guidepost for more effectively scheduling the second, regularly occurring job.

*Shipman* includes no disclosure relating to using an analysis of the occurrences of an irregularly occurring job to schedule a regularly occurring job. Instead, *Shipman* discloses a system/method that uses a forecasting technique to schedule future supply in accordance with

predicted demand. *Shipman's* failure to disclose or suggest anything relating to scheduling in accordance with whether the jobs are regularly or irregularly executed is critical since it is the regular/irregular distinction that is fundamental to Applicants' proposed invention.

On page 4, the final Office Action asserts that Applicants must provide evidence that *Shipman's* job scheduler includes a capability of scheduling regularly occurring jobs in accordance with data gathered from irregularly occurring jobs. Applicants disagree, and contend that it is sufficient to demonstrate and explain that the prior art reference *itself* fails to disclose or logically suggest the claimed element. Applicants have no way of determining what possible features the *Shipman* scheduler may have that fall outside the features that are disclosed or logically suggested by the patent itself. Applicants urge that unsupported speculation about undocumented capabilities or features of a prior art reference is not appropriate grounds for supporting a prior art rejection under 35 U.S.C. § 103(a).

Applicants agree that the jobs handled by *Shipman's* scheduler could possibly include regularly and/or irregularly occurring jobs. However, the very failure of *Shipman* to categorize the scheduled jobs as being irregularly or regularly occurring logically compels the conclusion that *Shipman* does not disclose any particular manner for handling or processing regularly versus irregularly occurring jobs. More specifically, *Shipman's* lack of disclosure relating to scheduling regularly executed jobs versus irregularly executed jobs compels a conclusion that *Shipman* does not disclose or suggest execution timing means for scheduling execution of a second, regularly scheduled job in accordance with a probability distribution determined in accordance with the execution times of a first, irregularly occurring job as expressly required by the claim language.

Page 9 of the final Office Action asserts that *Shipman's* teaching of calculating probability distribution functions of jobs which may occur at any time (regularly or irregularly) would render Applicants' proposed invention obvious to one skilled in the art. Again, it is *Shipman's* failure to categorize or otherwise distinguish between regularly and irregularly occurring jobs that most clearly illustrates that Applicants' proposed invention as recited in claims 1, 10, and 19 is not an obvious variant of *Shipman's* disclosed scheduler.

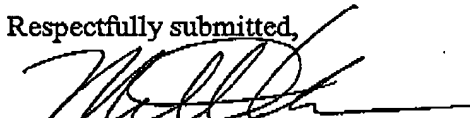
Nothing in *Shipman* or any other art known to Applicants discloses or suggests, either individually or in combination, steps of determining a probability distribution in accordance with times at which execution of an irregularly occurring first job occurs, and scheduling execution of

a regularly occurring second job in accordance with the so-determined probability distribution, as recited by Applicants' independent claims 1, 10, and 19. Applicants thus contend that claims 1, 10, and 19 and all claims depending therefrom are not rendered obvious by the disclosure of *Shipman*.

### CONCLUSION

For the foregoing reasons, it is respectfully submitted that the pending claims have been placed in condition for allowance and favorable action is respectfully requested. Applicants invite the Examiner to contact the undersigned attorney of record at (512) 343-6116 if such would further or expedite the prosecution of the present Application.

Respectfully submitted,



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